

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET
(Pursuant to NAC 445A.236)

Permittee Department of Public Works
City of Las Vegas
731 S 4th St
Las Vegas NV 89101

Permit No. NV0022748

Facility Groundwater treatment system serving the Bonneville Ave underpass, at the railroad crossing east of Grand Central Pkwy
Las Vegas, Clark County
Latitude: 36° 10' 0" N
Longitude: 115° 09' 23" W
T20S R61E S34

General The Bonneville Ave underpass extends below the water table and pumping is necessary to remove accumulations of stormwater and groundwater. Groundwater is treated due to the presence of a fuel plume from an adjacent property. Stormwater flows into drop inlets along the roadway, while groundwater infiltrates into the structure through joints and perforations. Both flows collect in a 29 ft deep sump. The sump has a small 1 ft deep depression and pump that report to the groundwater treatment system. The larger sump itself is equipped with four pumps that discharge to a nearby drainage ditch. The result of this is that the dry weather flow of infiltrated groundwater is pumped to the treatment system, while larger storm flows exceed the capacity of the sub-system and are pumped to the ditch, along with the groundwater that infiltrates during that time. The effect of this untreated fraction should be considerably reduced by dilution and evaporation along the flow path. The treatment system consists of four carbon adsorption tanks, with only two in service at any one time, followed by a 4 in discharge line terminating at a drop inlet on Grand Central Parkway. Characterization of the fuel plume has been conducted under the Division's Corrective Action program, and cleanup activities are expected to commence shortly. The source was the previously existing Union Pacific rail yard, which has become the site of a large urban redevelopment project called Union Park.

Receiving Water Characteristics The storm drain discharges to a tributary of Las Vegas Wash, and the standards set at the nearest

downstream control point, "Las Vegas Wash at Telephone Line Road" (NAC 445A.199), apply. In addition, the state wide standards for toxic materials, NAC445A.144, are applicable, and Total Maximum Daily Loads (TMDLs) for Las Vegas Wash have been established for total phosphorus and ammonia.

Rationale for Permit Requirements The monitoring requirements, discharge limits, and a summary of the quarterly monitoring conducted under the previous permit from January 2003 through March 2007 are presented in the two tables below and form the basis for the discussion that follows.

Table I.A.1 Discharge Limitations

Parameter mg/l except as noted		Discharge Limitations	Monitoring Requirements	
			Measurement Frequency	Sample Type
Flow rate ¹ , gpd		m & r	continuous	meter
TPH (C6 - C36)		1	quarterly	discrete
Trichloroethene (TCE), µg/l		5	quarterly	discrete
Tetrachloroethene (PCE), µg/l		5	quarterly	discrete
EPA Method 8260 (influent) ² , µg/l		m & r	annual	discrete
Nitrogen Species as N	Total Inorganic Nitrogen	20	quarterly	discrete
	NH3	m & r	quarterly	discrete
	NO2 + NO3	m & r	quarterly	discrete
Total Phosphorus		m & r	quarterly	discrete
pH, standard units		6.5 to 9	quarterly	discrete
TDS		m & r	quarterly	discrete
Metals ³		m & r	annual	discrete

1. Report average gpd for each month.
2. Influent to carbon adsorption treatment system. Analyses for expanded EPA 8260 (volatile organic compounds) parameter list including methyl tert-butyl ether (MTBE).
3. Analyses shall include antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, copper, fluoride, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, selenium, silver, thallium, zinc, and hardness as calcium carbonate. Analyses shall be for total metals.

Discharge Monitoring Results - January 2003 thru March 2007

mg/l except as indicated	count ¹	min	avg	max
parameter				
flow, gpd	47	479	15,853	23,852
NH3	2	0.14	0.62	1.10
NO2 + NO3	11	2.27	3.14	3.98
TIN	15	1.15	3.13	4.12
pH, standard units	13	6.99	7.24	7.53
TDS	15	1,390	1,633	1,880
TP	12	0.02	0.06	0.25
trichloroethene (TCE), ug/l	1	1.9	1.9	1.9
tetrachloroethene (PCE), ug/l	2	1.5	22.3	43.0
INFLUENT				
cis-1,2-dichloroethene, ug/l	4	1.2	1.4	1.6
trichloroethene (TCE), ug/l	11	1.7	4.8	6.8
tetrachloroethene (PCE), ug/l	11	38	96	170

1. Number of flow measurements or analytical detections. Flow was reported monthly.

FLOW , monitor & report: Flow data is necessary for determining impacts to the receiving waters from the various constituents present. The average reported flow rate is 15,853 gpd (11 gpm).

TOTAL PETROLEUM HYDROCARBONS (TPH), 1 mg/l: This technology based limit is included based on the existing fuel plume. TPH was not detected.

TRICHLOROETHENE (TCE), 5 µg/l: This limit is taken from the toxics standard for the municipal or domestic supply beneficial use. TCE was detected one time, in March of 2003 at 1.9 µg/l - likely due to a carbon change out error.

TETRACHLOROETHENE (PCE), 5 µg/l: This limit is the Maximum Contaminant Level (MCL) for drinking water. PCE was detected two times, in March and November 2003, at 1.5 and 43 µg/l, respectively; the higher value was caused by sample contamination.

EPA METHOD 8260 (full range), influent: This annual scan is included to provide information on plume constituents. The major contaminants are TCE and PCE, at average concentrations of 4.8 and 96 µg/l, respectively.

NITROGEN SPECIES AS N:

- TOTAL INORGANIC NITROGEN (TIN), 20 mg/l: This limit is taken from the control point standards, and is based on existing water quality. Total inorganic nitrogen is determined from the sum of separate analyses for nitrate, nitrite, and ammonia; the occurrence of those forms is discussed below.
- AMMONIA, monitor & report: This is included due to the TMDL, which is 970 lb/day. Ammonia was detected twice, at 0.14 and 1.10 mg/l. At 1.10 mg/l and 11 gpm, the contribution from this source would be 0.15 lb/day.
- NITRITE (NO₂) + NITRATE (NO₃), monitor & report: These are included since they're part of the TIN analysis. There were 11 detections at an average concentration of 3.14 mg/l, assumed to be mostly in the form of NO₃.

TOTAL PHOSPHORUS, monitor & report: This is included due to the TMDL, which is 434 lb/day. Phosphorus was detected twelve times, at an average concentration of 0.06 mg/l. At that concentration and 11 gpm, the contribution from this source would be 0.0079 lb/day.

pH, 6.5 - 9.0, standard units: This is the control point standard, based on beneficial uses. Reported values range from 6.99 to 7.53 s.u.

TDS, monitor & report: This is included due to salinity impacts in the Colorado River basin. The average concentration is 1633 mg/l, vs a control point standard of 1900 mg/l based on existing quality. This parameter is not limited based on natural occurrence and difficulty of treatment.

METALS, monitor & report: These are of interest based on their environmental effects in general. They're not limited based on natural occurrence and difficulty of treatment, and weren't sampled for under the previous permit.

Changes from the Previous Permit The changes are listed below with some explanation. Additional information is given in the previous section.

FLOW: The previous permit limit of 35,000 gpd has been replaced with "monitor & report" because flow rate is governed by water table

elevation, hydraulic conductivity, and structural leakage; and setting a "limit" in this regard serves no environmental purpose.

NH₃, and NO₂ + NO₃: Analytical results are to be reported.

METALS: An annual scan for priority pollutant metals has been added.

Procedures for Public Comment Notice of the Division's intent to renew discharge permit NV0022748, authorizing a discharge from the groundwater treatment system serving the City of Las Vegas' Bonneville Ave underpass, will be published in the Las Vegas Review Journal Friday August 10, 2007 and distributed to persons on our mailing list. Anyone wishing to comment on the proposed permit must submit written comments to the Division within (30) days of the publication date. The comment period can be extended at the discretion of the Administrator. The deadline for comments is 5:00 pm Monday September 10, 2007, although letters postmarked on that date will also be accepted.

A public hearing on the proposed determination can be requested by the applicant, any affected state or interstate agency, the Regional Administrator, or any interested agency, person, or group of persons. The request must be filed within the comment period and indicate the interest of the person filing the request and the reasons why a hearing is warranted. Public hearings granted by the Division are conducted in accordance with NAC 445A.238.

The final determination of the Division may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination The Division has made the tentative determination to issue the proposed discharge permit for a five year term.

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